

SEQUENCE LISTING

<110 Pagano, M.

<120> METHODS TO IDENTIFY COMPOUNDS USEFUL FOR THE TREATMENT OF PROLIFERATIVE AND DIFFERENTIATIVE DISORDERS

<130> 5914-090-999

<140> To be assigned

<141> 2002-01-07

<150> 60/260,179

<151> 2001-01-5

<160> 89

<170> PatentIn Ver. 2.0

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<211> 2151

<212> DNA

<213> Homo sapiens

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 Lys Thr Glu Asn Cys Val Ala Lys Thr Lys Leu Ala Asn Gly Thr Ser
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 Glu Lys Glu Leu Cys Val Lys Tyr Phe Glu Gln Trp Ser Glu Ser Asp
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 Gln Val Glu Phe Val Glu His Leu Ile Ser Gln Met Cys His Tyr Gln
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Ile Ser Leu Ser Gly Ala Val Gln Leu Arg His Leu Ser Asn Asn Leu
  35          40          45

Glu Thr Leu Leu Lys Arg Asp Phe Leu Lys Leu Leu Pro Leu Glu Leu
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Ser Phe Tyr Leu Leu Lys Trp Leu Asp Pro Gln Thr Leu Leu Thr Cys
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Cys Leu Val Ser Lys Gln Trp Asn Lys Val Ile Ser Ala Cys Thr Glu
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Val Trp Gln Thr Ala Cys Lys Asn Leu Gly Trp Gln Ile Asp Asp Ser
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Ile Gly His Ser Ala Arg Val Tyr Ala Leu Tyr Tyr Lys Asp Gly Leu
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Leu Cys Thr Gly Ser Asp Asp Leu Ser Ala Lys Leu Trp Asp Val Ser
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Thr Gly Gln Cys Val Tyr Gly Ile Gln Thr His Thr Cys Ala Ala Val
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His Thr Gly Ala Val Phe Ser Val Asp Tyr Asn Asp Glu Leu Asp Ile
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Leu Val Ser Gly Ser Ala Asp Phe Thr Val Lys Val Trp Ala Leu Ser
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Ala Gly Thr Cys Leu Asn Thr Leu Thr Gly His Thr Glu Trp Val Thr
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Lys Val Val Leu Gln Lys Cys Lys Val Lys Ser Leu Leu His Ser Pro
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Gly Asp Tyr Ile Leu Leu Ser Ala Asp Lys Tyr Glu Ile Lys Ile Trp
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Pro Ile Gly Arg Glu Ile Asn Cys Lys Cys Leu Lys Thr Leu Ser Val
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Ser Glu Asp Arg Ser Ile Cys Leu Gln Pro Arg Leu His Phe Asp Gly
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Lys Tyr Ile Val Cys Ser Ser Ala Leu Gly Leu Tyr Gln Trp Asp Phe
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Ala Ser Tyr Asp Ile Leu Arg Val Ile Lys Thr Pro Glu Ile Ala Asn
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Arg Tyr Leu Tyr Ile Met Asp Leu Arg Thr Glu Ser Leu Ile Ser Arg
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      20              25              30

Thr Cys Asp Trp Gly Asn Leu Leu Gln Asp Ile Ile Leu Gln Val Phe
      35              40              45

Lys Tyr Leu Pro Leu Leu Asp Arg Ala His Ala Ser Gln Val Cys Arg
      50              55              60

Asn Trp Asn Gln Val Phe His Met Pro Asp Leu Trp Arg Cys Phe Glu
      65              70              75              80

Phe Glu Leu Asn Gln Pro Ala Thr Ser Tyr Leu Lys Ala Thr His Pro
      85              90              95

Glu Leu Ile Lys Gln Ile Ile Lys Arg His Ser Asn His Leu Gln Tyr
      100             105             110

Val Ser Phe Lys Val Asp Ser Ser Lys Glu Ser Ala Glu Ala Ala Cys
      115             120             125

Asp Ile Leu Ser Gln Leu Val Asn Cys Ser Leu Lys Thr Leu Gly Leu
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Ile Ser Thr Ala Arg Pro Ser Phe Met Asp Leu Pro Lys Ser His Phe
      145             150             155             160

Ile Ser Ala Leu Thr Val Val Phe Val Asn Ser Lys Ser Leu Ser Ser
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Leu Lys Ile Asp Asp Thr Pro Val Asp Asp Pro Ser Leu Lys Val Leu
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Val Ala Asn Asn Ser Asp Thr Leu Lys Leu Leu Lys Met Ser Ser Cys
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Gly Arg Leu Ser Gln Leu Ser Ile Met Glu Glu Val Leu Ile Pro Asp						
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 65 70 75 80
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Ala Lys Arg Asn Pro Lys Val Asp Arg Glu Met Leu Lys Glu Ile Ile
210 215 220

Ala Arg Gly Asn Phe Arg Leu Gln Asn Ile Ile Gly Arg Lys Met Gly
225 230 235 240

Leu Glu Cys Val Asp Ile Leu Ser Glu Leu Phe Arg Arg Gly Leu Arg
245 250 255

His Val Leu Ala Thr Ile Leu Ala Gln Leu Ser Asp Met Asp Leu Ile
260 265 270

Asn Val Ser Lys Val Ser Thr Thr Trp Lys Lys Ile Leu Glu Asp Asp
275 280 285

Lys Gly Ala Phe Gln Leu Tyr Ser Lys Ala Ile Gln Arg Val Thr Glu
290 295 300

Asn Asn Asn Lys Phe Ser Pro His Ala Ser Thr Arg Glu Tyr Val Met
305 310 315 320

Phe Arg Thr Pro Leu Ala Ser Val Gln Lys Ser Ala Ala Gln Thr Ser
325 330 335

Leu Lys Lys Asp Ala Gln Thr Lys Leu Ser Asn Gln Gly Asp Gln Lys
340 345 350

Gly Ser Thr Tyr Ser Arg His Asn Glu Phe Ser Glu Val Ala Lys Thr
355 360 365

Leu Lys Lys Asn Glu Ser Leu Lys Ala Cys Ile Arg Cys Asn Ser Pro
370 375 380

Ala Lys Tyr Asp Cys Tyr Leu Gln Arg Ala Thr Cys Lys Arg Glu Gly
385 390 395 400

Cys Gly Phe Asp Tyr Cys Thr Lys Cys Leu Cys Asn Tyr His Thr Thr
405 410 415

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<213> Homo sapiens

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<212> PRT
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Pro His Ser Lys Ala Ala Leu Asp Ser Ile Asn Glu Leu Pro Asp Asn
  50              55              60

Ile Leu Leu Glu Leu Phe Thr His Val Pro Ala Arg Gln Leu Leu Leu
  65              70              75              80

Asn Cys Arg Leu Val Cys Ser Leu Trp Arg Asp Leu Ile Asp Leu Leu
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Thr Leu Trp Lys Arg Lys Cys Leu Arg Lys Gly Phe Ile Thr Lys Asp
              100              105              110

Trp Asp Gln Pro Val Ala Asp Trp Lys Ile Phe Tyr Phe Leu Arg Ser
              115              120              125

Leu His Arg Asn Leu Leu Arg Asn Pro Cys Ala Glu Asn Asp Met Phe
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Ala Trp Gln Ile Asp Phe Asn Gly Gly Asp Arg Trp Lys Val Asp Ser
              145              150              155              160

Leu Pro Gly Ala His Gly Thr Glu Phe Pro Asp Pro Lys Val Lys Lys
              165              170              175

Ser Phe Val Thr Ser Tyr Glu Leu Cys Leu Lys Trp Glu Leu Val Asp
              180              185              190

Leu Leu Ala Asp Arg Tyr Trp Glu Glu Leu Leu Asp Thr Phe Arg Pro
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Asp Ile Val Val Lys Asp Trp Phe Ala Ala Arg Ala Asp Cys Gly Cys
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 Thr Tyr Gln Leu Lys Val Gln Leu Ala Ser Ala Asp Tyr Phe Val Leu
 225 230 235 240
 Ala Ser Phe Glu Pro Pro Val Thr Ile Gln Gln Trp Asn Asn Ala
 245 250 255
 Thr Trp Thr Glu Val Ser Tyr Thr Phe Ser Asp Tyr Pro Arg Gly Val
 260 265 270
 Arg Tyr Ile Leu Phe Gln His Gly Gly Arg Asp Thr Gln Tyr Trp Ala
 275 280 285
 Gly Trp Tyr Gly Pro Arg Val Thr Asn Ser Ser Ile Val Val Ser Pro
 290 295 300
 Lys Met Thr Arg Asn Gln Ala Ser Ser Glu Ala Gln Pro Gly Gln Lys
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 His Gly Gln Glu Glu Ala Ala Gln Ser Pro Tyr Gly Ala Val Val Gln
 325 330 335

Ile Phe

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 <212> DNA
 <213> Homo sapiens

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1763

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<211> 482

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<213> Homo sapiens

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Leu	Ile	Cys	Leu	Ile	Leu	His	Asp	Asp	Ile	Pro	Pro	Pro	Asn	Ile	Pro
		35					40						45		
Ser	Ser	Thr	Asp	Ser	Glu	His	Ser	Ser	Leu	Gln	Asn	Asn	Glu	Gln	Pro
	50					55					60				
Ser	Leu	Ala	Thr	Ser	Ser	Asn	Gln	Thr	Ser	Ile	Gln	Asp	Glu	Gln	Pro
65					70					75					80
Ser	Asp	Ser	Phe	Gln	Gly	Gln	Ala	Ala	Gln	Ser	Gly	Val	Trp	Asn	Asp
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Asp	Ser	Met	Leu	Gly	Pro	Ser	Gln	Asn	Phe	Glu	Ala	Glu	Ser	Ile	Gln
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Asp	Asn	Ala	His	Met	Ala	Glu	Gly	Thr	Gly	Phe	Tyr	Pro	Ser	Glu	Pro
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Leu	Leu	Cys	Ser	Glu	Ser	Val	Glu	Gly	Gln	Val	Pro	His	Ser	Leu	Glu
	130					135					140				
Thr	Leu	Tyr	Gln	Ser	Ala	Asp	Cys	Ser	Asp	Ala	Asn	Asp	Ala	Leu	Ile
145					150					155					160
Val	Leu	Ile	His	Leu	Leu	Met	Leu	Glu	Ser	Gly	Tyr	Ile	Pro	Gln	Gly
				165					170					175	
Thr	Glu	Ala	Lys	Ala	Leu	Ser	Leu	Pro	Glu	Lys	Trp	Lys	Leu	Ser	Gly
			180					185					190		
Val	Tyr	Lys	Leu	Gln	Tyr	Met	His	His	Leu	Cys	Glu	Gly	Ser	Ser	Ala
		195					200					205			
Thr	Leu	Thr	Cys	Val	Pro	Leu	Gly	Asn	Leu	Ile	Val	Val	Asn	Ala	Thr
	210					215					220				
Leu	Lys	Ile	Asn	Asn	Glu	Ile	Arg	Ser	Val	Lys	Arg	Leu	Gln	Leu	Leu
225					230					235					240
Pro	Glu	Ser	Phe	Ile	Cys	Lys	Glu	Lys	Leu	Gly	Glu	Asn	Val	Ala	Asn
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Ile	Tyr	Lys	Asp	Leu	Gln	Lys	Leu	Ser	Arg	Leu	Phe	Lys	Asp	Gln	Leu
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Val	Tyr	Pro	Leu	Leu	Ala	Phe	Thr	Arg	Gln	Ala	Leu	Asn	Leu	Pro	Asn
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290 295 300

Arg Leu Leu Asp Val Arg Ser Val Leu Ser Leu Ser Ala Val Cys Arg
305 310 315 320

Asp Leu Phe Thr Ala Ser Asn Asp Pro Leu Leu Trp Arg Phe Leu Tyr
325 330 335

Leu Arg Asp Phe Arg Asp Asn Thr Val Arg Val Gln Asp Thr Asp Trp
340 345 350

Lys Glu Leu Tyr Arg Lys Arg His Ile Gln Arg Lys Glu Ser Pro Lys
355 360 365

Gly Arg Phe Val Leu Leu Leu Pro Ser Ser Thr His Thr Ile Pro Phe
370 375 380

Tyr Pro Asn Pro Leu His Pro Arg Pro Phe Pro Ser Ser Arg Leu Pro
385 390 395 400

Pro Gly Ile Ile Gly Gly Glu Tyr Asp Gln Arg Pro Thr Leu Pro Tyr
405 410 415

Val Gly Asp Pro Ile Ser Ser Leu Ile Pro Gly Pro Gly Glu Thr Pro
420 425 430

Ser Gln Leu Pro Pro Leu Arg Pro Arg Phe Asp Pro Val Gly Pro Leu
435 440 445

Pro Gly Pro Asn Pro Ile Leu Pro Gly Arg Gly Gly Pro Asn Asp Arg
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Phe Pro Phe Arg Pro Ser Arg Gly Arg Pro Thr Asp Gly Arg Leu Ser
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Phe Met

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<212> PRT
<213> Homo sapiens

<400> 15
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Leu Asp Ala Lys Ser Leu Cys Ala Ala Glu Leu Val Cys Lys Glu Trp
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Tyr Arg Val Thr Ser Asp Gly Met Leu Trp Lys
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<212> PRT
<213> Homo sapiens

<400> 16
Leu Pro Leu Glu Leu Ser Phe Tyr Leu Leu Lys Trp Leu Asp Pro Gln
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Ser Ala Cys Thr Glu Val Trp Gln
 35 40

<210> 17
 <211> 39
 <212> PRT
 <213> Homo sapiens

<400> 17
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Asp Arg Ala His Ala Ser Gln Val Cys Arg Asn Trp Asn Gln Val Phe
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His Met Pro Asp Leu Trp Arg
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 <211> 39
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Asp Leu Cys Gln Leu Gly Ser Thr Asn His Tyr Trp Asn Glu Thr Val
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Arg Asn Pro Ile Leu Trp Arg
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Gln Leu Leu Leu Asn Cys Arg Leu Val Cys Ser Leu Trp Arg Asp Leu
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Ile Asp Leu Leu Thr Leu Trp Lys
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<210> 21
 <211> 39
 <212> PRT
 <213> Homo sapiens

<400> 21
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Ser Val Leu Ser Leu Ser Ala Val Cys Arg Asp Leu Phe Thr Ala Ser
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Asn Asp Pro Leu Leu Trp Arg
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<210> 22
 <211> 39
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 <213> Homo sapiens

<400> 22
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Ser Asp Glu Ser Leu Trp Gln
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<210> 24
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<400> 24
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 Thr His Thr His Thr Val Leu Leu Asp Trp Gly Ser Leu Pro His His
 35 40 45
 Val Val Leu Gln Ile Phe Gln Tyr Leu Pro Leu Leu Asp Arg Ala Cys
 50 55 60
 Ala Ser Ser Val Cys Arg Arg Trp Asn Glu Val Phe His Ile Ser Asp
 65 70 75 80
 Leu Trp Arg Lys Phe Glu Phe Glu Leu Asn Gln Ser Ala Thr Ser Ser
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 Phe Lys Ser Thr His Pro Asp Leu Ile Gln Gln Ile Ile Lys Lys His
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 Phe Ala His Leu Gln Tyr Val Ser Phe Lys Val Asp Ser Ser Ala Glu
 115 120 125
 Ser Ala Glu Ala Ala Cys Asp Ile Leu Ser Gln Leu Val Asn Cys Ser
 130 135 140
 Ile Gln Thr Leu Gly Leu Ile Ser Thr Ala Lys Pro Ser Phe Met Asn
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 Val Ser Glu Ser His Phe Val Ser Ala Leu Thr Val Val Phe Ile Asn
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 Ser Lys Ser Leu Ser Ser Ile Lys Ile Glu Asp Thr Pro Val Asp Asp
 180 185 190
 Pro Ser Leu Lys Ile Leu Val Ala Asn Asn Ser Asp Thr Leu Arg Leu
 195 200 205
 Pro Lys Met Ser Ser Cys Pro His Val Ser Ser Asp Gly Ile Leu Cys
 210 215 220
 Val Ala Asp Arg Cys Gln Gly Leu Arg Glu Leu Ala Leu Asn Tyr Tyr
 225 230 235 240
 Ile Leu Thr Asp Glu Leu Phe Leu Ala Leu Ser Ser Glu Thr His Val
 245 250 255
 Asn Leu Glu His Leu Arg Ile Asp Val Val Ser Glu Asn Pro Gly Gln
 260 265 270

Ile Lys Phe His Ala Val Lys Lys His Ser Trp Asp Ala Leu Ile Lys
275 280 285

His Ser Pro Arg Val Asn Val Val Met His Phe Phe Leu Tyr Glu Glu
290 295 300

Glu Phe Glu Thr Phe Phe Lys Glu Glu Thr Pro Val Thr His Leu Tyr
305 310 315 320

Phe Gly Arg Ser Val Ser Lys Val Val Leu Gly Arg Val Gly Leu Asn
325 330 335

Cys Pro Arg Leu Ile Glu Leu Val Val Cys Ala Asn Asp Leu Gln Pro
340 345 350

Leu Asp Asn Glu Leu Ile Cys Ile Ala Glu His Cys Thr Asn Leu Thr
355 360 365

Ala Leu Gly Leu Ser Lys Cys Glu Val Ser Cys Ser Ala Phe Ile Arg
370 375 380

Phe Val Arg Leu Cys Glu Arg Arg Leu Thr Gln Leu Ser Val Met Glu
385 390 395 400

Glu Val Leu Ile Pro Asp Glu Asp Tyr Ser Leu Asp Glu Ile His Thr
405 410 415

Glu Val Ser Lys Tyr Leu Gly Arg Val Trp Phe Pro Asp Val Met Pro
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Leu Trp

<210> 25
<211> 1970
<212> DNA
<213> Homo sapiens

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<210> 26
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<212> PRT
<213> Homo sapiens

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Val Thr Ser Thr Gly Val Asp Lys Ser Leu Asn Gln Leu Leu His Gly
      35             40             45

Leu Gly Thr Ser Ser Arg Leu Ser His Phe Pro Phe Gly Lys Ser Pro
      50             55             60

Pro Arg Gly Gln Phe Val Ala Ala Ala Val Glu Ile Ala Gly Arg Ser
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Gly Leu Gln Met Gly Gln Gly Leu Trp Arg Val Val Arg Asn Gln Gln
      85             90             95

Leu Gln Gln Glu Gly Tyr Ser Glu Gln Gly Tyr Leu Thr Arg Glu Gln
      100            105            110

Ser Arg Arg Met Ala Ala Ser Asn Ile Ser Asn Thr Asn His Arg Lys
      115            120            125

Gln Val Gln Gly Gly Ile Asp Ile Tyr His Leu Leu Lys Ala Arg Lys
      130            135            140

Ser Lys Glu Gln Glu Gly Phe Ile Asn Leu Glu Met Leu Pro Pro Glu
      145            150            155            160

Leu Ser Phe Thr Ile Leu Ser Tyr Leu Asn Ala Thr Asp Leu Cys Leu
      165            170            175

Ala Ser Cys Val Trp Gln Asp Leu Ala Asn Asp Glu Leu Leu Trp Gln
      180            185            190

Gly Leu Cys Lys Ser Thr Trp Gly His Cys Ser Ile Tyr Asn Lys Asn
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Pro Pro Leu Gly Phe Ser Phe Arg Lys Xaa Tyr Met Gln Leu Asp Glu
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Asp	Glu	Arg	Arg	Asp	Val	Leu	Asp	Asp	Leu	Val	Thr	Leu	His	Asn	Phe	275	280	285	
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His	Ser	Cys	Arg	Met	Ile	Asn	His	Tyr	Thr	Leu	Lys	Asp	Gly	Val	Phe	485	490	495	
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Tyr	His	Val	Met	Cys	Thr	Tyr	Leu	Thr	Lys	Glu	Ile	Tyr	Ser	His	Asn	515	520	525	
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Arg Val Leu Ile Cys Tyr Tyr Ile Thr Met Gln Asn Trp Gln Leu Phe
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Leu Tyr Lys Phe Ile Ile Phe Phe Ile Leu Lys Thr Gly Leu Ile Lys
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 <212> PRT
 <213> Homo sapiens

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 35 40 45
 Ala Ala Asp Ile Gly Arg Val Ser Ser Thr Cys Arg Arg Leu Arg Glu
 50 55 60
 Leu Cys Gln Ser Ser Gly Lys Val Trp Lys Glu Gln Phe Arg Val Arg
 65 70 75 80
 Trp Pro Ser Leu Met Lys His Tyr Ser Pro Thr Asp Tyr Val Asn Trp
 85 90 95
 Leu Glu Glu Tyr Lys Val Arg Gln Lys Ala Gly Leu Glu Ala Arg Lys
 100 105 110
 Ile Val Ala Ser Phe Ser Lys Arg Phe Phe Ser Glu His Val Pro Cys
 115 120 125
 Asn Gly Phe Ser Asp Ile Glu Asn Leu Glu Gly Pro Glu Ile Phe Phe
 130 135 140

Glu	Asp	Glu	Leu	Val	Cys	Ile	Leu	Asn	Met	Glu	Gly	Arg	Lys	Ala	Leu	145	150	155	160
Thr	Trp	Lys	Tyr	Tyr	Ala	Lys	Lys	Ile	Leu	Tyr	Tyr	Leu	Arg	Gln	Gln	165	170		175
Lys	Ile	Leu	Asn	Asn	Leu	Lys	Ala	Phe	Leu	Gln	Gln	Pro	Asp	Asp	Tyr	180	185		190
Glu	Ser	Tyr	Leu	Glu	Gly	Ala	Val	Tyr	Ile	Asp	Gln	Tyr	Cys	Asn	Pro	195	200		205
Leu	Ser	Asp	Ile	Ser	Leu	Lys	Asp	Ile	Gln	Ala	Gln	Ile	Asp	Ser	Ile	210	215		220
Val	Glu	Leu	Val	Cys	Lys	Thr	Leu	Arg	Gly	Ile	Asn	Ser	Arg	His	Pro	225	230		235
Ser	Leu	Ala	Phe	Lys	Ala	Gly	Glu	Ser	Ser	Met	Ile	Met	Glu	Ile	Glu	245	250		255
Leu	Gln	Ser	Gln	Val	Leu	Asp	Ala	Met	Asn	Tyr	Val	Leu	Tyr	Asp	Gln	260	265		270
Leu	Lys	Phe	Lys	Gly	Asn	Arg	Met	Asp	Tyr	Tyr	Asn	Ala	Leu	Asn	Leu	275	280		285
Tyr	Met	His	Gln	Val	Leu	Ile	Arg	Arg	Thr	Gly	Ile	Pro	Ile	Ser	Met	290	295		300
Ser	Leu	Leu	Tyr	Leu	Thr	Ile	Ala	Arg	Gln	Leu	Gly	Val	Pro	Leu	Glu	305	310		315
Pro	Val	Asn	Phe	Pro	Ser	His	Phe	Leu	Leu	Arg	Trp	Cys	Gln	Gly	Ala	325	330		335
Glu	Gly	Ala	Thr	Leu	Asp	Ile	Phe	Asp	Tyr	Ile	Tyr	Ile	Asp	Ala	Phe	340	345		350
Gly	Lys	Gly	Lys	Gln	Leu	Thr	Val	Lys	Glu	Cys	Glu	Tyr	Leu	Ile	Gly	355	360		365
Gln	His	Val	Thr	Ala	Ala	Leu	Tyr	Gly	Val	Val	Asn	Val	Lys	Lys	Val	370	375		380
Leu	Gln	Arg	Met	Val	Gly	Asn	Leu	Leu	Ser	Leu	Gly	Lys	Arg	Glu	Gly	385	390		395
Ile	Asp	Gln	Ser	Tyr	Gln	Leu	Leu	Arg	Asp	Ser	Leu	Asp	Leu	Tyr	Leu	405	410		415
Ala	Met	Tyr	Pro	Asp	Gln	Val	Gln	Leu	Leu	Leu	Leu	Gln	Ala	Arg	Leu	420	425		430
Tyr	Phe	His	Leu	Gly	Ile	Trp	Pro	Glu	Lys	Val	Leu	Asp	Ile	Leu	Gln	435	440		445
His	Ile	Gln	Thr	Leu	Asp	Pro	Gly	Gln	His	Gly	Ala	Val	Gly	Tyr	Leu	450	455		460
Val	Gln	His	Thr	Leu	Glu	His	Ile	Glu	Arg	Lys	Lys	Glu	Glu	Val	Gly	465	470		475
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Val Glu Val Lys Leu Arg Ser Asp Glu Lys His Arg Asp Val Cys Tyr
485 490 495

Ser Ile Gly Leu Ile Met Lys His Lys Arg Tyr Gly Tyr Asn Cys Val
500 505 510

Ile Tyr Gly Trp Asp Pro Thr Cys Met Met Gly His Glu Trp Ile Arg
515 520 525

Asn Met Asn Val His Ser Leu Pro His Gly His His Gln Pro Phe Tyr
530 535 540

Asn Val Leu Val Glu Asp Gly Ser Cys Arg Tyr Ala Ala Gln Glu Asn
545 550 555 560

Leu Glu Tyr Asn Val Glu Pro Gln Glu Ile Ser His Pro Asp Val Gly
565 570 575

Arg Tyr Phe Ser Glu Phe Thr Gly Thr His Tyr Ile Pro Asn Ala Glu
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<223> n=a, c, g or t

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Ser Asn Leu Ala Glu Val Val Glu Arg Val Leu Thr Phe Leu Pro Ala

35 40 45

Lys Ala Leu Leu Arg Val Ala Cys Val Cys Arg Leu Trp Arg Glu Cys
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Gly Leu Ala Glu Ala Gly His Leu Xaa Gly His
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Pro Pro Gln Gln Gln Gln Gln Gln Gln Pro Pro Pro Pro Pro Pro Pro
35 40 45

Pro Pro Pro Leu Pro Gln Glu Arg Asn Asn Val Gly Glu Arg Asp Asp
50 55 60

Asp Val Pro Ala Asp Met Val Ala Glu Glu Ser Gly Pro Gly Ala Gln
65 70 75 80

Asn Ser Pro Tyr Gln Leu Arg Arg Lys Thr Leu Leu Pro Lys Arg Thr
85 90 95

Ala Cys Pro Thr Lys Asn Ser Met Glu Gly Ala Ser Thr Ser Thr Thr
100 105 110

Glu Asn Phe Gly His Arg Ala Lys Arg Ala Arg Val Ser Gly Lys Ser
115 120 125

Gln Asp Leu Ser Ala Ala Pro Ala Glu Gln Tyr Leu Gln Glu Lys Leu
130 135 140

Pro Asp Glu Val Val Leu Lys Ile Phe Ser Tyr Leu Leu Glu Gln Asp

Abstract The purpose of this study was to determine the effect of a 12-week training program on the physical fitness of 100 male and female students. The program included aerobic, strength, and flexibility exercises. Pre- and post-training measurements of heart rate, blood pressure, and body composition were taken. Results showed significant improvements in all measured variables, indicating that the program was effective in enhancing physical fitness.

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Tyr	Leu	His	Leu	Pro	Asp	Leu	Gly	Arg	Cys	Ser	Leu	Val	Cys	Arg	Ala		
		35					40					45					
Trp	Tyr	Glu	Leu	Ile	Leu	Ser	Leu	Asp	Ser	Thr	Arg	Trp	Arg	Gln	Leu		
	50					55					60						
Cys	Leu	Gly	Cys	Thr	Glu	Cys	Arg	His	Pro	Asn	Trp	Pro	Asn	Gln	Pro		
65					70					75					80		
Asp	Val	Glu	Pro	Glu	Ser	Trp	Arg	Glu	Ala	Phe	Lys	Gln	His	Tyr	Leu		
				85					90					95			
Ala	Ser	Lys	Thr	Trp	Thr	Lys	Asn	Ala	Leu	Asp	Leu	Glu	Ser	Ser	Ile		
			100					105					110				
Cys	Phe	Ser	Leu	Phe	Arg	Arg	Arg	Arg	Glu	Arg	Arg	Thr	Leu	Ser	Val		
		115					120					125					
Gly	Pro	Gly	Arg	Glu	Phe	Asp	Ser	Leu	Gly	Ser	Ala	Leu	Ala	Met	Ala		
	130					135					140						
Ser	Leu	Tyr	Asp	Arg	Ile	Val	Leu	Phe	Pro	Gly	Val	Tyr	Glu	Glu	Gln		
145					150					155					160		

Gly Glu Ile Ile Leu Lys Val Pro Val Glu Ile Val Gly Gln Gly Lys
 165 170 175

Leu Gly

<210> 35
 <211> 751
 <212> DNA
 <213> Homo sapiens

<400> 35
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 cagctatcaa gtcattgatc gctgtggaga agacattgca aaaaataactg gctgatatct 180
 gaggaagaga aaacacagaa gaatcagtggt tggaaatctc tcttcataga tacttactct 240
 gatgtaggaa gatacattga ccattatgct gctattaaaa aggcctcggg aatgatctca 300
 agaaatattt ggagcccagg tgcctcggga tgggttttat ctctgaaaga ggggtgctcg 360
 agaggaagac ctccgatgctg tgggaagcga gattgggctg caagtttcct ggacgattat 420
 cgatgttcat accgaattca caatggacag aagttagttg gttcctgggg ttattgggaa 480
 gcatggcact gtctaatacac tategttctg aagatttggt agacgtcgat acagctgccg 540
 gagattccag cagagacagg gactgaaata ctgtctccct ttaacttttg catacatact 600
 ggtttgagtc agtacatagc agtggaagct gcagaggggt gaaacaaaaa tgaagttttc 660
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 tgtataaatg gcatgcatta ggtattttca g 751

<210> 36
 <211> 247
 <212> PRT
 <213> Homo sapiens

<400> 36
 Glu Thr Glu Thr Ala Pro Leu Thr Leu Glu Ser Leu Pro Thr Asp Pro
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 Leu Leu Leu Ile Leu Ser Phe Leu Asp Tyr Arg Asp Leu Ile Asn Cys
 20 25 30
 Cys Tyr Val Ser Arg Arg Leu Ser Gln Leu Ser Ser His Asp Pro Leu
 35 40 45
 Trp Arg Arg His Cys Lys Lys Tyr Trp Leu Ile Ser Glu Glu Glu Lys
 50 55 60
 Thr Gln Lys Asn Gln Cys Trp Lys Ser Leu Phe Ile Asp Thr Tyr Ser
 65 70 75 80
 Asp Val Gly Arg Tyr Ile Asp His Tyr Ala Ala Ile Lys Lys Ala Ser
 85 90 95
 Gly Met Ile Ser Arg Asn Ile Trp Ser Pro Gly Val Leu Gly Trp Val
 100 105 110
 Leu Ser Leu Lys Glu Gly Cys Ser Arg Gly Arg Pro Arg Cys Cys Gly
 115 120 125
 Ser Ala Asp Trp Ala Ala Ser Phe Leu Asp Asp Tyr Arg Cys Ser Tyr
 130 135 140
 Arg Ile His Asn Gly Gln Lys Leu Val Gly Ser Trp Gly Tyr Trp Glu
 145 150 155 160

Ala Trp His Cys Leu Ile Thr Ile Val Leu Lys Ile Cys Thr Ser Ile
165 170 175

Gln Leu Pro Glu Ile Pro Ala Glu Thr Gly Thr Glu Ile Leu Ser Pro
180 185 190

Phe Asn Phe Cys Ile His Thr Gly Leu Ser Gln Tyr Ile Ala Val Glu
195 200 205

Ala Ala Glu Gly Asn Lys Asn Glu Val Phe Tyr Gln Cys Gln Thr Val
210 215 220

Glu Arg Val Phe Lys Tyr Gly Ile Lys Met Cys Ser Asp Gly Cys Ile
225 230 235 240

Asn Gly Met His Val Phe Ser
245

<210> 37
<211> 368
<212> DNA
<213> Homo sapiens

<220>
<221> modified_base
<222> all n positions
<223> n=a, c, g or t

<400> 37
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tgggtgctgg gagccctgtt cctggctatc ggctctctgg cctgggggtga gaagggcggt 180
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ggtagttgga ggcgtcatgt cgggtgctggg ctttgctggg ctgcaattgg ggccctcgg 300
gagaacacct tctgtctcaa gtttttctnc gngttcctcg gtctcatctt cttcctggag 360
ctggcaac 368

<210> 38
<211> 122
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> all Xaa positions
<223> Xaa=unknown amino acid residue

<400> 38
Gly Ser Gly Phe Arg Ala Gly Gly Trp Pro Leu Thr Met Pro Gly Lys
1 5 10 15

His Gln His Phe Gln Glu Pro Glu Val Gly Cys Cys Gly Lys Tyr Phe
20 25 30

Leu Phe Gly Phe Asn Ile Val Phe Trp Val Leu Gly Ala Leu Phe Leu
35 40 45

Ala Ile Gly Leu Trp Ala Trp Gly Glu Lys Gly Val Leu Ser Asn Ile
50 55 60

Ser Ala Leu Thr Asp Leu Gly Gly Leu Asp Pro Val Trp Leu Val Cys
65 70 75 80

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Gly Ser Trp Arg Arg His Val Gly Ala Gly Leu Cys Trp Ala Ala Ile
 85 90 95

Gly Ala Leu Arg Glu Asn Thr Phe Leu Leu Lys Phe Phe Xaa Xaa Phe
 100 105 110

Leu Gly Leu Ile Phe Phe Leu Glu Leu Ala
 115 120

<210> 39
 <211> 774
 <212> DNA
 <213> Homo sapiens

<400> 39
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 gagctggtgg acggcgcccc gctgtggtg ctcaagtgcc agcaggaggg gctggtgccc 180
 gagggcggcg tggaggagga gcgcgaccac tggcagcagt tctacttcct gagcaagcgg 240
 cggcgcaacc ttctgcgtaa cccgtgtggg gaagaggact tgggaaggctg gtgtgacgtg 300
 gagcatggtg gggacggctg gaggggtggag gagctgcctg gagacagtgg ggtggagttc 360
 acccacgatg agagcgtcaa gaagtacttc gcctcctcct ttgagtgggtg tcgcaaagca 420
 caggtcattg acctgcaggc tgagggctac tgggaggagc tgctggacac gactcagccg 480
 gccatcgtgg tgaaggactg gtactcgggc cgcagcgacg ctggttgect ctacgagctc 540
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 gcagtgcgcc aagacagtga cggcgggggc tggatggaga tctccacac cttcaccgac 660
 tacgggccgg gcgtccgctt cgtccgcttc gagcacgggg ggcaggggctc cgtctactgg 720
 aagggctggt tcggggcccg ggtgaccaac agcagcgtgt gggtagaacc ctga 774

<210> 40
 <211> 257
 <212> PRT
 <213> Homo sapiens

<400> 40
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 1 5 10 15

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 20 25 30

Arg Leu Val Cys Leu Arg Trp Lys Glu Leu Val Asp Gly Ala Pro Leu
 35 40 45

Trp Leu Leu Lys Cys Gln Gln Glu Gly Leu Val Pro Glu Gly Gly Val
 50 55 60

Glu Glu Glu Arg Asp His Trp Gln Gln Phe Tyr Phe Leu Ser Lys Arg
 65 70 75 80

Arg Arg Asn Leu Leu Arg Asn Pro Cys Gly Glu Glu Asp Leu Glu Gly
 85 90 95

Trp Cys Asp Val Glu His Gly Gly Asp Gly Trp Arg Val Glu Glu Leu
 100 105 110

Pro Gly Asp Ser Gly Val Glu Phe Thr His Asp Glu Ser Val Lys Lys
 115 120 125

Tyr Phe Ala Ser Ser Phe Glu Trp Cys Arg Lys Ala Gln Val Ile Asp
 130 135 140

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Leu Gln Ala Glu Gly Tyr Trp Glu Glu Leu Leu Asp Thr Thr Gln Pro
 145 150 155 160
 Ala Ile Val Val Lys Asp Trp Tyr Ser Gly Arg Ser Asp Ala Gly Cys
 165 170 175
 Leu Tyr Glu Leu Thr Val Lys Leu Leu Ser Glu His Glu Asn Val Leu
 180 185 190
 Ala Glu Phe Ser Ser Gly Gln Val Ala Val Pro Gln Asp Ser Asp Gly
 195 200 205
 Gly Gly Trp Met Glu Ile Ser His Thr Phe Thr Asp Tyr Gly Pro Gly
 210 215 220
 Val Arg Phe Val Arg Phe Glu His Gly Gly Gln Gly Ser Val Tyr Trp
 225 230 235 240
 Lys Gly Trp Phe Gly Ala Arg Val Thr Asn Ser Ser Val Trp Val Glu
 245 250 255

Pro

<210> 41
 <211> 957
 <212> DNA
 <213> Homo sapiens

<400> 41
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 ttgttcccc cagagctggg ggagcataatc atctcattcc tcccagtcag agaccttggt 180
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 ggctaccgcc gcttcttgcc caccaaggat cacgtcttca ttcttgacta cgtggggacc 420
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 tcccactacc tgcctcacct gcgcgtggcc tgcattgactt ccaaccagag cagcaccctc 900
 tacgtcacag atcctattct gtgctcttgg ctacaaccac cttggcctgg tggatga 957

<210> 42
 <211> 318
 <212> PRT
 <213> Homo sapiens

<400> 42
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 1 5 10 15
 Ser Cys Pro Ser Cys Gly Ser Glu Leu Gly Val Glu Glu Lys Arg Gly
 20 25 30
 Lys Gly Asn Pro Ile Ser Ile Gln Leu Phe Pro Pro Glu Leu Val Glu
 35 40 45

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His Ile Ile Ser Phe Leu Pro Val Arg Asp Leu Val Ala Leu Gly Gln
50 55 60

Thr Cys Arg Tyr Phe His Glu Val Cys Asp Gly Glu Gly Val Trp Arg
65 70 75 80

Arg Ile Cys Arg Arg Leu Ser Pro Arg Leu Gln Asp Gln Asp Thr Lys
85 90 95

Gly Leu Tyr Phe Gln Ala Phe Gly Gly Arg Arg Arg Cys Leu Ser Lys
100 105 110

Ser Val Ala Pro Leu Leu Ala His Gly Tyr Arg Arg Phe Leu Pro Thr
115 120 125

Lys Asp His Val Phe Ile Leu Asp Tyr Val Gly Thr Leu Phe Phe Leu
130 135 140

Lys Asn Ala Leu Val Ser Thr Leu Gly Gln Met Gln Trp Lys Arg Ala
145 150 155 160

Cys Arg Tyr Val Val Leu Cys Arg Gly Ala Lys Asp Phe Ala Ser Asp
165 170 175

Pro Arg Cys Asp Thr Val Tyr Arg Lys Tyr Leu Tyr Val Leu Ala Thr
180 185 190

Arg Glu Pro Gln Glu Val Val Gly Thr Thr Ser Ser Arg Ala Cys Asp
195 200 205

Cys Val Glu Val Tyr Leu Gln Ser Ser Gly Gln Arg Val Phe Lys Met
210 215 220

Thr Phe His His Ser Met Thr Phe Lys Gln Ile Val Leu Val Gly Gln
225 230 235 240

Glu Thr Gln Arg Ala Leu Leu Leu Leu Thr Glu Glu Gly Lys Ile Tyr
245 250 255

Ser Leu Val Val Asn Glu Thr Gln Leu Asp Gln Pro Arg Ser Tyr Thr
260 265 270

Val Gln Leu Ala Leu Arg Lys Val Ser His Tyr Leu Pro His Leu Arg
275 280 285

Val Ala Cys Met Thr Ser Asn Gln Ser Ser Thr Leu Tyr Val Thr Asp
290 295 300

Pro Ile Leu Cys Ser Trp Leu Gln Pro Pro Trp Pro Gly Gly
305 310 315

<210> 43
<211> 1590
<212> DNA
<213> Homo sapiens

<400> 43
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ggggctgagg cgggagcgag gacacgccca agagaggaag cagagggagg cggaagcgtg 180
gaggaagggg cgagagggcat catcaaagga gatgagggga gcgtaggggc cgggaaagag 240
gcacaaggaa gaaagtatgg gaaggaggaa tggaggggtca gggctaggcg gcgggagggc 300


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gcctgccccgg ctgcgggggccc agcgctctgg cgccctgccgg aagtgcctgct gctgcacatg 480
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cacttcacca actgcgacct gctccggcgc cagatagcct gggcctcgct caactccggc 600
ttcacgcggc tcggcaccaa cctgatgacc agtgtcccag tgaaggtgtc tcagaactgg 660
atagtggggt gctgccgaga ggggattctg ctgaagtggg gatgcagtca gatgccctgg 720
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<210> 44
 <211> 529
 <212> PRT
 <213> Homo sapiens

<400> 44

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			20					25					30		
Asp	Gly	Glu	Gly	Gly	Ser	Gly	Pro	Gly	Ala	Glu	Ala	Gly	Ala	Arg	Thr
		35					40					45			
Arg	Pro	Arg	Glu	Glu	Ala	Glu	Gly	Gly	Gly	Ser	Val	Glu	Glu	Gly	Ala
	50					55					60				
Arg	Gly	Ile	Ile	Lys	Gly	Asp	Glu	Gly	Ser	Val	Gly	Ala	Gly	Lys	Glu
	65				70				75						80
Ala	Gln	Gly	Arg	Lys	Tyr	Gly	Lys	Glu	Glu	Trp	Arg	Val	Arg	Ala	Arg
				85					90					95	
Arg	Arg	Glu	Gly	Ala	Arg	Pro	Gly	Arg	Val	Gln	Gly	Gln	Gly	Gly	Gln
			100				105					110			
Val	Trp	Ala	Tyr	Ile	Pro	Gly	Thr	Gly	Ala	Ala	Met	Ala	Ala	Ala	Ala
		115				120					125				
Arg	Glu	Glu	Glu	Glu	Glu	Ala	Ala	Arg	Glu	Ser	Ala	Ala	Cys	Pro	Ala
	130					135					140				
Ala	Gly	Pro	Ala	Leu	Trp	Arg	Leu	Pro	Glu	Val	Leu	Leu	Leu	His	Met
	145				150				155					160	
Cys	Ser	Tyr	Leu	Asp	Met	Arg	Ala	Leu	Gly	Arg	Leu	Ala	Gln	Val	Tyr
			165					170					175		
Arg	Trp	Leu	Trp	His	Phe	Thr	Asn	Cys	Asp	Leu	Leu	Arg	Arg	Gln	Ile

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180					185					190					
Ala	Trp	Ala	Ser	Leu	Asn	Ser	Gly	Phe	Thr	Arg	Leu	Gly	Thr	Asn	Leu
		195					200					205			
Met	Thr	Ser	Val	Pro	Val	Lys	Val	Ser	Gln	Asn	Trp	Ile	Val	Gly	Cys
	210					215					220				
Cys	Arg	Glu	Gly	Ile	Leu	Leu	Lys	Trp	Arg	Cys	Ser	Gln	Met	Pro	Trp
225						230					235				240
Met	Gln	Leu	Glu	Asp	Asp	Ala	Leu	Tyr	Ile	Ser	Gln	Ala	Asn	Phe	Ile
				245					250					255	
Leu	Ala	Tyr	Gln	Phe	Arg	Pro	Asp	Gly	Ala	Ser	Leu	Asn	Arg	Gln	Pro
			260					265					270		
Leu	Gly	Val	Ser	Ala	Gly	His	Asp	Glu	Asp	Val	Cys	His	Phe	Val	Leu
		275					280					285			
Ala	Thr	Ser	His	Ile	Val	Ser	Ala	Gly	Gly	Asp	Gly	Lys	Ile	Gly	Leu
	290					295					300				
Gly	Lys	Ile	His	Ser	Thr	Phe	Ala	Ala	Lys	Tyr	Trp	Ala	His	Glu	Gln
305						310					315				320
Glu	Val	Asn	Cys	Val	Asp	Cys	Lys	Gly	Gly	Ile	Ile	Ser	Phe	Gly	Ser
				325					330					335	
Arg	Asp	Arg	Thr	Ala	Lys	Val	Trp	Pro	Leu	Ala	Ser	Gly	Gln	Leu	Gly
			340					345					350		
Gln	Cys	Leu	Tyr	Thr	Ile	Gln	Thr	Glu	Asp	Gln	Ile	Trp	Ser	Val	Ala
		355					360					365			
Ile	Arg	Pro	Leu	Leu	Ser	Ser	Phe	Val	Thr	Gly	Thr	Ala	Cys	Cys	Gly
	370					375					380				
His	Phe	Ser	Pro	Leu	Lys	Ile	Trp	Asp	Leu	Asn	Ser	Gly	Gln	Leu	Met
385						390					395				400
Thr	His	Leu	Asp	Arg	Asp	Phe	Pro	Pro	Arg	Ala	Gly	Val	Leu	Asp	Val
				405					410					415	
Ile	Tyr	Glu	Ser	Pro	Phe	Ala	Leu	Leu	Ser	Cys	Gly	Tyr	Asp	Thr	Tyr
			420					425					430		
Val	Arg	Tyr	Trp	Asp	Cys	Arg	Thr	Ser	Val	Arg	Lys	Cys	Val	Met	Glu
		435					440					445			
Trp	Glu	Glu	Pro	His	Asn	Ser	Thr	Leu	Tyr	Cys	Leu	Gln	Thr	Asp	Gly
	450					455					460				
Asn	His	Leu	Leu	Ala	Thr	Gly	Ser	Ser	Phe	Tyr	Ser	Val	Val	Arg	Leu
465						470					475				480
Trp	Asp	Arg	His	Gln	Arg	Ala	Cys	Pro	His	Thr	Phe	Pro	Leu	Thr	Ser
				485					490					495	
Thr	Arg	Leu	Gly	Ser	Pro	Val	Tyr	Cys	Leu	His	Leu	Thr	Thr	Lys	His
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Pro

<210> 45

<211> 1214

<212> DNA

<213> Homo sapiens

<400> 45

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<210> 46

<211> 272

<212> PRT

<213> Homo sapiens

<400> 46

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      20             25             30
Ile Arg Thr Phe Asn Tyr Val Val Lys Leu Leu Gln Leu Ile Ala Lys
      35             40             45
Ser Gln Leu Thr Ser Leu Ser Gly Val Ala Gln Lys Asn Tyr Phe Asn
      50             55             60
Ile Leu Asp Lys Ile Val Gln Lys Val Leu Asp Asp His His Asn Pro
      65             70             75             80
Arg Leu Ile Lys Asp Leu Leu Gln Asp Leu Ser Ser Thr Leu Cys Ile
      85             90             95
Leu Ile Arg Gly Val Gly Lys Ser Val Leu Val Gly Asn Ile Asn Ile
      100            105            110
Trp Ile Cys Arg Leu Glu Thr Ile Leu Ala Trp Gln Gln Gln Leu Gln
      115            120            125

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Asp Leu Gln Met Thr Lys Gln Val Asn Asn Gly Leu Thr Leu Ser Asp
 130 135 140
 Leu Pro Leu His Met Leu Asn Asn Ile Leu Tyr Arg Phe Ser Asp Gly
 145 150 155 160
 Trp Asp Ile Ile Thr Leu Gly Gln Val Thr Pro Thr Leu Tyr Met Leu
 165 170 175
 Ser Glu Asp Arg Gln Leu Trp Lys Lys Leu Cys Gln Tyr His Phe Ala
 180 185 190
 Glu Lys Gln Phe Cys Arg His Leu Ile Leu Ser Glu Lys Gly His Ile
 195 200 205
 Glu Trp Lys Leu Met Tyr Phe Ala Leu Gln Lys His Tyr Pro Ala Lys
 210 215 220
 Glu Gln Tyr Gly Asp Thr Leu His Phe Cys Arg His Cys Ser Ile Leu
 225 230 235 240
 Phe Trp Lys Asp Ser Gly His Pro Cys Thr Ala Ala Asp Pro Asp Ser
 245 250 255
 Cys Phe Thr Pro Val Ser Pro Gln His Phe Ile Asp Leu Phe Lys Phe
 260 265 270

<210> 47
 <211> 4059
 <212> DNA
 <213> Homo sapiens

<400> 47
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<210> 48

<211> 483

<212> PRT

<213> Homo sapiens

<400> 48

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Ser Glu Asp Ser Asp Leu Ser Met Arg Thr Leu Ser Thr Pro Ser Pro
35 40 45

Ala Leu Ile Cys Pro Pro Asn Leu Pro Gly Phe Gln Asn Gly Arg Gly
50 55 60

Ser Ser Thr Ser Ser Ser Ser Ile Thr Gly Glu Thr Val Ala Met Val
65 70 75 80

His	Ser	Pro	Pro	Pro	Thr	Arg	Leu	Thr	His	Pro	Leu	Ile	Arg	Leu	Ala	85	90	95
Ser	Arg	Pro	Gln	Lys	Glu	Gln	Ala	Ser	Ile	Asp	Arg	Leu	Pro	Asp	His	100	105	110
Ser	Met	Val	Gln	Ile	Phe	Ser	Phe	Leu	Pro	Thr	Asn	Gln	Leu	Cys	Arg	115	120	125
Cys	Ala	Arg	Val	Cys	Arg	Arg	Trp	Tyr	Asn	Leu	Ala	Trp	Asp	Pro	Arg	130	135	140
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Cys	Leu	Met	Leu	Glu	Thr	Val	Thr	Val	Ser	Gly	Cys	Arg	Arg	Leu	Thr	180	185	190
Asp	Arg	Gly	Leu	Tyr	Thr	Ile	Ala	Gln	Cys	Cys	Pro	Glu	Leu	Arg	Arg	195	200	205
Leu	Glu	Val	Ser	Gly	Cys	Tyr	Asn	Ile	Ser	Asn	Glu	Ala	Val	Phe	Asp	210	215	220
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Ser	Lys	Val	Thr	Cys	Ile	Ser	Leu	Thr	Arg	Glu	Ala	Ser	Ile	Lys	Leu	245	250	255
Ser	Pro	Leu	His	Gly	Lys	Gln	Ile	Ser	Ile	Arg	Tyr	Leu	Asp	Met	Thr	260	265	270
Asp	Cys	Phe	Val	Leu	Glu	Asp	Glu	Gly	Leu	His	Thr	Ile	Ala	Ala	His	275	280	285
Cys	Thr	Gln	Leu	Thr	His	Leu	Tyr	Leu	Arg	Arg	Cys	Val	Arg	Leu	Thr	290	295	300
Asp	Glu	Gly	Leu	Arg	Tyr	Leu	Val	Ile	Tyr	Cys	Ala	Ser	Ile	Lys	Glu	305	310	315
Leu	Ser	Val	Ser	Asp	Cys	Arg	Phe	Val	Ser	Asp	Phe	Gly	Leu	Arg	Glu	325	330	335
Ile	Ala	Lys	Leu	Glu	Ser	Arg	Leu	Arg	Tyr	Leu	Ser	Ile	Ala	His	Cys	340	345	350
Gly	Arg	Val	Thr	Asp	Val	Gly	Ile	Arg	Tyr	Val	Ala	Lys	Tyr	Cys	Ser	355	360	365
Lys	Leu	Arg	Tyr	Leu	Asn	Ala	Arg	Gly	Cys	Glu	Gly	Ile	Thr	Asp	His	370	375	380
Gly	Val	Glu	Tyr	Leu	Ala	Lys	Asn	Cys	Thr	Lys	Leu	Lys	Ser	Leu	Asp	385	390	395
Ile	Gly	Lys	Cys	Pro	Leu	Val	Ser	Asp	Thr	Gly	Leu	Glu	Cys	Leu	Ala	405	410	415

Leu Asn Cys Phe Asn Leu Lys Arg Leu Ser Leu Lys Ser Cys Glu Ser
 420 425 430
 Ile Thr Gly Gln Gly Leu Gln Ile Val Ala Ala Asn Cys Phe Asp Leu
 435 440 445
 Gln Thr Leu Asn Val Gln Asp Cys Glu Val Ser Val Glu Ala Leu Arg
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 Phe Val Lys Arg His Cys Lys Arg Cys Val Ile Glu His Thr Asn Pro
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 Ala Phe Phe

<210> 49
 <211> 850
 <212> DNA
 <213> Homo sapiens

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<210> 50
 <211> 283
 <212> PRT
 <213> Homo sapiens

<400> 50
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 35 40 45
 Gly Arg Ala Ala Arg Val Cys Arg Arg Trp Gln Glu Ala Ala Ser Gln
 50 55 60
 Pro Ala Leu Trp His Thr Val Thr Leu Ser Ser Pro Leu Val Gly Arg
 65 70 75 80
 Pro Ala Lys Gly Gly Val Lys Ala Glu Lys Lys Leu Leu Ala Ser Leu
 85 90 95
 Glu Trp Leu Met Pro Asn Arg Phe Ser Gln Leu Gln Arg Leu Thr Leu

10042417.010702

100	105	110
Ile His Trp Lys Ser Gln Val	His Pro Val Leu Lys Leu	Val Gly Glu
115	120	125
Cys Cys Pro Arg Leu Thr Phe	Leu Lys Leu Ser Gly Cys	His Gly Val
130	135	140
Thr Ala Asp Ala Leu Val Met	Leu Ala Lys Ala Cys Cys	Gln Leu His
145	150	155
Ser Leu Asp Leu Gln His Ser	Met Val Glu Ser Thr Ala	Val Val Ser
165	170	175
Phe Leu Glu Glu Ala Gly Ser	Arg Met Arg Lys Leu Trp	Leu Thr Tyr
180	185	190
Ser Ser Gln Thr Thr Ala Ile	Leu Gly Ala Leu Leu Gly	Ser Cys Cys
195	200	205
Pro Gln Leu Gln Val Leu Glu	Val Ser Thr Gly Ile Asn	Arg Asn Ser
210	215	220
Ile Pro Leu Gln Leu Pro Val	Glu Ala Leu Gln Lys Gly	Cys Pro Gln
225	230	235
Leu Gln Val Leu Arg Leu Leu	Asn Leu Met Trp Leu Pro	Lys Pro Pro
245	250	255
Gly Arg Gly Val Ala Pro Gly	Pro Gly Phe Pro Ser Leu	Glu Glu Leu
260	265	270
Cys Leu Ala Ser Ser Thr Cys	Asn Phe Val Ser	
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<210> 51
 <211> 1777
 <212> DNA
 <213> Homo sapiens

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 <222> all n positions
 <223> n=a, c, g or t

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<210> 52
 <211> 590
 <212> PRT
 <213> Homo sapiens

<220>
 <221> SITE
 <222> all Xaa positions
 <223> Xaa=unknown amino acid residue

<400> 52
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 20 25 30
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 35 40 45
 Ile Thr His Leu Pro Pro Glu Val Met Leu Ser Ile Phe Ser Tyr Leu
 50 55 60
 Asn Pro Gln Glu Leu Cys Arg Cys Ser Gln Val Ser Met Lys Trp Ser
 65 70 75 80
 Gln Leu Thr Lys Thr Gly Ser Leu Trp Lys His Leu Tyr Pro Val His
 85 90 95
 Trp Ala Arg Gly Asp Trp Tyr Ser Gly Pro Ala Thr Glu Leu Asp Thr
 100 105 110
 Glu Pro Asp Asp Glu Trp Val Lys Asn Arg Lys Asp Glu Ser Arg Ala
 115 120 125
 Phe His Glu Trp Asp Glu Asp Ala Asp Ile Asp Glu Ser Glu Glu Ser
 130 135 140
 Ala Glu Glu Ser Ile Ala Ile Ser Ile Ala Gln Met Glu Lys Arg Leu
 145 150 155 160
 Leu His Gly Leu Ile His Asn Val Leu Pro Tyr Val Gly Thr Ser Val
 165 170 175
 Lys Thr Leu Val Leu Ala Tyr Ser Ser Ala Val Ser Ser Lys Met Val
 180 185 190
 Arg Gln Ile Leu Glu Leu Cys Pro Asn Leu Glu His Leu Asp Leu Thr

20042417-010702

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210						215					220				
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Thr	Asp	Val	Ala	Leu	Glu	Lys	Ile	Ser	Arg	Ala	Leu	Gly	Ile	Leu	Thr
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Ser	His	Gln	Ser	Gly	Phe	Leu	Lys	Thr	Ser	Thr	Ser	Lys	Ile	Thr	Ser
			260					265					270		
Thr	Ala	Trp	Lys	Asn	Lys	Asp	Ile	Thr	Met	Gln	Ser	Thr	Lys	Gln	Tyr
		275					280						285		
Ala	Cys	Leu	His	Asp	Leu	Thr	Asn	Lys	Gly	Ile	Gly	Glu	Glu	Ile	Asp
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Asn	Glu	His	Pro	Trp	Thr	Lys	Pro	Val	Ser	Ser	Glu	Asn	Phe	Thr	Ser
305					310					315					320
Pro	Tyr	Val	Trp	Met	Leu	Asp	Ala	Glu	Asp	Leu	Ala	Asp	Ile	Glu	Asp
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Thr	Val	Glu	Trp	Arg	His	Arg	Asn	Val	Glu	Ser	Leu	Cys	Val	Met	Glu
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Thr	Ala	Ser	Asn	Phe	Ser	Cys	Ser	Thr	Ser	Gly	Cys	Phe	Ser	Lys	Asp
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Ile	Val	Gly	Leu	Arg	Thr	Ser	Val	Cys	Trp	Gln	Gln	His	Cys	Ala	Ser
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Pro	Ala	Phe	Ala	Tyr	Cys	Gly	His	Ser	Phe	Cys	Cys	Thr	Gly	Thr	Ala
385					390					395					400
Leu	Arg	Thr	Met	Ser	Ser	Leu	Pro	Glu	Ser	Ser	Ala	Met	Cys	Arg	Lys
			405						410					415	
Ala	Ala	Arg	Thr	Arg	Leu	Pro	Arg	Gly	Lys	Asp	Leu	Ile	Tyr	Phe	Gly
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Ser	Glu	Lys	Ser	Asp	Gln	Glu	Thr	Gly	Arg	Val	Leu	Leu	Phe	Leu	Ser
		435					440					445			
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Leu	Thr	Ile	Thr	Gly	Ala	Gly	Leu	Gln	Asp	Leu	Val	Ser	Ala	Cys	Pro
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Ser	Leu	Asn	Asp	Glu	Tyr	Phe	Tyr	Tyr	Cys	Asp	Asn	Ile	Asn	Gly	Pro
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His	Ala	Asp	Thr	Ala	Ser	Gly	Cys	Gln	Asn	Leu	Gln	Cys	Gly	Phe	Arg
		515					520					525			
Ala	Cys	Cys	Arg	Ser	Gly	Glu	Pro	Leu	Thr	Ser	Asp	Leu	Cys	Leu	Leu

530

535

540

His Leu Ala Glu Gln Ala Phe Phe His Ala Leu Tyr Ser His Ile Ser
545 550 555 560

Cys Val Asn His Pro Phe Leu Ser Val Thr Cys Phe Gly Pro Ile Xaa
565 570 575

Tyr Asn Phe Arg Asn Leu Asn Tyr Gln Xaa Ile Val Met Leu
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<210> 53

<211> 1681

<212> DNA

<213> Homo sapiens

<220>

<221> modified_base

<222> all n positions

<223> n=a, c, g or t

<400> 53

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ttgctgcaac cggaaaggca gagagcctgt agccgggtgac agcccctgca tatctgcacc 960
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gctttcaggc ctgcacaacc tcgcaccagt gcctcgatgc catccttcgt gatctgatca 1140
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atgtttcggc agttctgtgc aaaggctctt aaggaggaat cccaacacc aatgcagcct 1380
cgcaagctga gcttcctcag gaatccaacg catcgcttcg agatattttc caccactcga 1440
ccctctacat ctatttgaaa gttaaaaaga tctattcttt gccagttgct tccatccagg 1500
gctaagatgt tccaagcctt ggaaatctgt gcacatcggc acaaagttac tatatccaag 1560
aagggaaaata ttcttaacag aagttctttg ggtaactttt tgtaataaag gccttcatca 1620
ttgtttgaga aaaccatggc cgaagagccg cgagcgagcc cacagcccga agtcacacgg 1680
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<210> 54

<211> 437

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> all Xaa positions

<223> Xaa=unknown amino acid residue

<400> 54
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 Phe Ser Asn Asn Asp Glu Gly Leu Ile Asn Lys Lys Leu Pro Lys Glu
 20 25 30
 Leu Leu Leu Arg Ile Phe Ser Phe Leu Asp Ile Val Thr Leu Cys Arg
 35 40 45
 Cys Ala Gln Ile Ser Lys Ala Trp Asn Ile Leu Ala Leu Asp Gly Ser
 50 55 60
 Asn Trp Gln Arg Ile Asp Leu Phe Asn Phe Gln Ile Asp Val Glu Gly
 65 70 75 80
 Arg Val Val Glu Asn Ile Ser Lys Arg Cys Val Gly Phe Leu Arg Lys
 85 90 95
 Leu Ser Leu Arg Gly Cys Ile Gly Val Gly Asp Ser Ser Leu Lys Thr
 100 105 110
 Phe Ala Gln Asn Cys Arg Asn Ile Glu His Leu Asn Leu Asn Gly Cys
 115 120 125
 Thr Lys Ile Thr Asp Ser Thr Cys Tyr Ser Leu Ser Arg Phe Cys Ser
 130 135 140
 Lys Leu Lys His Leu Xaa Leu Thr Ser Cys Val Ser Ile Thr Asn Ser
 145 150 155 160
 Ser Leu Lys Gly Ile Ser Glu Gly Cys Arg Asn Leu Glu Tyr Leu Asn
 165 170 175
 Leu Ser Trp Cys Asp Gln Ile Thr Lys Asp Gly Ile Glu Ala Leu Val
 180 185 190
 Arg Gly Cys Arg Gly Leu Lys Ala Leu Leu Leu Arg Gly Cys Thr Gln
 195 200 205
 Leu Glu Asp Glu Ala Leu Lys His Ile Gln Asn Tyr Cys His Glu Leu
 210 215 220
 Val Ser Leu Asn Leu Gln Ser Cys Ser Arg Ile Thr Asp Glu Gly Val
 225 230 235 240
 Val Gln Ile Cys Arg Gly Cys His Arg Leu Gln Ala Leu Cys Leu Ser
 245 250 255
 Gly Cys Ser Asn Leu Thr Asp Ala Ser Leu Thr Ala Leu Gly Leu Asn
 260 265 270
 Cys Pro Arg Leu Gln Ile Leu Glu Ala Ala Arg Cys Ser His Leu Thr
 275 280 285
 Asp Ala Gly Phe Thr Leu Leu Ala Arg Asn Cys His Glu Leu Glu Lys
 290 295 300
 Met Asp Leu Glu Xaa Cys Ile Leu Ile Thr Asp Ser Thr Leu Ile Gln
 305 310 315 320
 Leu Ser Ile His Cys Pro Lys Leu Gln Ala Leu Ser Leu Ser His Cys
 325 330 335

Glu Leu Ile Xaa Asp Asp Gly Ile Leu His Leu Ser Asn Ser Thr Cys
 340 345 350
 Gly His Glu Arg Leu Arg Val Leu Glu Leu Asp Asn Cys Leu Leu Ile
 355 360 365
 Thr Asp Val Ala Leu Xaa His Leu Glu Asn Cys Arg Gly Leu Glu Arg
 370 375 380
 Leu Glu Leu Tyr Asp Cys Gln Gln Val Thr Arg Ala Gly Ile Lys Arg
 385 390 395 400
 Met Arg Ala Gln Leu Pro His Val Lys Val His Ala Tyr Phe Ala Pro
 405 410 415
 Val Thr Pro Pro Thr Ala Val Ala Gly Ser Gly Gln Arg Leu Cys Arg
 420 425 430
 Cys Cys Val Ile Leu
 435

<210> 55
 <211> 1866
 <212> DNA
 <213> Homo sapiens

<400> 55
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 aacagccaga cttccccctc caatgcagag gtagtccagt atgccaaga agtagtgat 180
 ttcagttccc attatggaag tgagaatagt atgtccctata ctatgtggaa tttggctgg 240
 gtaccaaag tttcccaag ttctggtgac tttactcaga cagctgtgtt tcgaacttat 300
 gggacatggg gggatcagtg tcctagtgtc tccttgccat tcaagaggac gccaccta 360
 tttcagagcc aggactatgt ggaacttact tttgaacaac aggtgtatcc tacagctg 420
 catgttctag aaacctatca tcccggagca gtcattagaa ttctcgcttg ttctgcaa 480
 ccttattccc caaatccacc agctgaagta agatgggaga ttctttgggc agagagac 540
 acgaagggtga atgcttccca agctcgccag tttaaacctt gtattaagca gataaatt 600
 cccacaaatc ttatacgact ggaagtaaat agttctcttc tggaatatta cactgaat 660
 gatgcagttg tgctacatgg tgtgaaggac aagccagtg tttctctcaa gacttca 720
 attgacatga atgatataga agatgatgcc tatgcagaaa aggatgggtg tggaatgg 780
 agtcttaaca aaaagtttag cagtgtgtgc ctccggggaag ggccaaataa tgggtatt 840
 gataaactac cttatgagct tattcagctg attctgaatc atcttacact accagac 900
 tgtagattag cacagacttg caaactactg agccagcatt gctgtgatcc tctgcaat 960
 atccacctca atctgcaacc atactgggca aaactagatg acacttctct ggaatttcta 1020
 cagtctcgct gcactcttgt ccagtggcct aatttatctt ggactggcaa tagaggct 1080
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 gaattgtctt gcagccactt tcttaatgaa acttgcttag aagttatttc tgagatgt 1200
 ccaaattctac aggccttaaa tctctcctcc tgtgataagc taccacctca agctttca 1260
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 tgtgtcatga ttgaagacta tgatgtgata gctagcatga taggagccaa gtgtaaaa 1440
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 gcttctgggt gtccactact ggaggagctt gaccttggct ggtgcccac tctgcagag 1560
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 ctggaatctt gtaaagatct ttctttactt gatgtgtcct tctgttcgca gattgata 1800
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<210> 56
 <211> 621

<212> PRT
 <213> Homo sapiens

<400> 56

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Ile	Cys	Leu	Arg	Arg	Arg	Ala	Arg	Thr	Ala	Thr	Arg	Gly	Glu	Met	Met
			20					25					30		
Asn	Thr	His	Arg	Ala	Ile	Glu	Ser	Asn	Ser	Gln	Thr	Ser	Pro	Leu	Asn
		35					40					45			
Ala	Glu	Val	Val	Gln	Tyr	Ala	Lys	Glu	Val	Val	Asp	Phe	Ser	Ser	His
	50					55					60				
Tyr	Gly	Ser	Glu	Asn	Ser	Met	Ser	Tyr	Thr	Met	Trp	Asn	Leu	Ala	Gly
65					70					75					80
Val	Pro	Asn	Val	Phe	Pro	Ser	Ser	Gly	Asp	Phe	Thr	Gln	Thr	Ala	Val
				85					90					95	
Phe	Arg	Thr	Tyr	Gly	Thr	Trp	Trp	Asp	Gln	Cys	Pro	Ser	Ala	Ser	Leu
			100					105					110		
Pro	Phe	Lys	Arg	Thr	Pro	Pro	Asn	Phe	Gln	Ser	Gln	Asp	Tyr	Val	Glu
		115					120					125			
Leu	Thr	Phe	Glu	Gln	Gln	Val	Tyr	Pro	Thr	Ala	Val	His	Val	Leu	Glu
	130					135					140				
Thr	Tyr	His	Pro	Gly	Ala	Val	Ile	Arg	Ile	Leu	Ala	Cys	Ser	Ala	Asn
145					150					155					160
Pro	Tyr	Ser	Pro	Asn	Pro	Pro	Ala	Glu	Val	Arg	Trp	Glu	Ile	Leu	Trp
				165					170					175	
Ser	Glu	Arg	Pro	Thr	Lys	Val	Asn	Ala	Ser	Gln	Ala	Arg	Gln	Phe	Lys
			180					185					190		
Pro	Cys	Ile	Lys	Gln	Ile	Asn	Phe	Pro	Thr	Asn	Leu	Ile	Arg	Leu	Glu
		195				200						205			
Val	Asn	Ser	Ser	Leu	Leu	Glu	Tyr	Tyr	Thr	Glu	Leu	Asp	Ala	Val	Val
	210					215					220				
Leu	His	Gly	Val	Lys	Asp	Lys	Pro	Val	Leu	Ser	Leu	Lys	Thr	Ser	Leu
225					230					235					240
Ile	Asp	Met	Asn	Asp	Ile	Glu	Asp	Asp	Ala	Tyr	Ala	Glu	Lys	Asp	Gly
			245						250					255	
Cys	Gly	Met	Asp	Ser	Leu	Asn	Lys	Lys	Phe	Ser	Ser	Ala	Val	Leu	Gly
			260					265					270		
Glu	Gly	Pro	Asn	Asn	Gly	Tyr	Phe	Asp	Lys	Leu	Pro	Tyr	Glu	Leu	Ile
		275					280					285			
Gln	Leu	Ile	Leu	Asn	His	Leu	Thr	Leu	Pro	Asp	Leu	Cys	Arg	Leu	Ala
	290					295					300				
Gln	Thr	Cys	Lys	Leu	Leu	Ser	Gln	His	Cys	Cys	Asp	Pro	Leu	Gln	Tyr
305					310					315					320

Ile	His	Leu	Asn	Leu	Gln	Pro	Tyr	Trp	Ala	Lys	Leu	Asp	Asp	Thr	Ser	
				325					330					335		
Leu	Glu	Phe	Leu	Gln	Ser	Arg	Cys	Thr	Leu	Val	Gln	Trp	Leu	Asn	Leu	
			340					345					350			
Ser	Trp	Thr	Gly	Asn	Arg	Gly	Phe	Ile	Ser	Val	Ala	Gly	Phe	Ser	Arg	
		355					360					365				
Phe	Leu	Lys	Val	Cys	Gly	Ser	Glu	Leu	Val	Arg	Leu	Glu	Leu	Ser	Cys	
	370					375					380					
Ser	His	Phe	Leu	Asn	Glu	Thr	Cys	Leu	Glu	Val	Ile	Ser	Glu	Met	Cys	
385					390					395				400		
Pro	Asn	Leu	Gln	Ala	Leu	Asn	Leu	Ser	Ser	Cys	Asp	Lys	Leu	Pro	Pro	
				405					410					415		
Gln	Ala	Phe	Asn	His	Ile	Ala	Lys	Leu	Cys	Ser	Leu	Lys	Arg	Leu	Val	
			420					425					430			
Leu	Tyr	Arg	Thr	Lys	Val	Glu	Gln	Thr	Ala	Leu	Leu	Ser	Ile	Leu	Asn	
		435					440					445				
Phe	Cys	Ser	Glu	Leu	Gln	His	Leu	Ser	Leu	Gly	Ser	Cys	Val	Met	Ile	
	450					455					460					
Glu	Asp	Tyr	Asp	Val	Ile	Ala	Ser	Met	Ile	Gly	Ala	Lys	Cys	Lys	Lys	
465					470					475					480	
Leu	Arg	Thr	Leu	Asp	Leu	Trp	Arg	Cys	Lys	Asn	Ile	Thr	Glu	Asn	Gly	
			485						490					495		
Ile	Ala	Glu	Leu	Ala	Ser	Gly	Cys	Pro	Leu	Leu	Glu	Glu	Leu	Asp	Leu	
			500					505					510			
Gly	Trp	Cys	Pro	Thr	Leu	Gln	Ser	Ser	Thr	Gly	Cys	Phe	Thr	Arg	Leu	
		515					520					525				
Ala	His	Gln	Leu	Pro	Asn	Leu	Gln	Lys	Leu	Phe	Leu	Thr	Ala	Asn	Arg	
	530					535					540					
Ser	Val	Cys	Asp	Thr	Asp	Ile	Asp	Glu	Leu	Ala	Cys	Asn	Cys	Thr	Arg	
545					550					555					560	
Leu	Gln	Gln	Leu	Asp	Ile	Leu	Gly	Thr	Arg	Met	Val	Ser	Pro	Ala	Ser	
			565					570						575		
Leu	Arg	Lys	Leu	Leu	Glu	Ser	Cys	Lys	Asp	Leu	Ser	Leu	Leu	Asp	Val	
			580					585					590			
Ser	Phe	Cys	Ser	Gln	Ile	Asp	Asn	Arg	Ala	Val	Leu	Glu	Leu	Asn	Ala	
		595				600						605				
Ser	Phe	Pro	Lys	Val	Phe	Ile	Lys	Lys	Ser	Phe	Thr	Gln				
	610					615					620					

<210> 57
 <211> 984
 <212> DNA
 <213> Homo sapiens

<400> 57
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tcctactttcc agcagcaact cacatttcag gactctgtgc ttaaactgtg tcagcctgag 180
cttgagagca gtcagattca catatcagtg ctgccaatgg aggtcctgat gtacatcttc 240
cgatgggtgg tgtctagtga cttggacctc agatcattgg agcagttgtc gctgggtgtgc 300
agaggattct acatctgtgc cagagaccct gaaatatggc gtctggcctg cttgaaagtt 360
tggggcagaa gctgtattaa acttggttccg tacacgtcct ggagagagat gtttttagaa 420
cggcctcgtg ttcggtttga tggcgtgtat atcagtaaaa ccacatatat tcgtcaaggg 480
gaacagtctc ttgatgggtt ctatagagcc tggcaccaag tggaatatta caggtacata 540
agattctttc ctgatggcca tgtgatgatg ttgacaaccc ctgaagagcc tcagtccatt 600
gttccacgtt taagaactag gaataccagg actgatgcaa ttctactggg tcactatcgc 660
ttgtcacaag acacagacaa tcagaccaa gtttttgctg taataactaa gaaaaaagaa 720
gaaaaaccac ttgactataa atacagatat tttcgtcgtg tccctgtaca agaagcagat 780
cagagttttc atgtggggct acagctatgt tccagtgggc accagagggt caacaaactc 840
atctggatac atcattcttg tcacattact tacaaatcaa ctggtgagac tgcagtcagt 900
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gctttctcag aaaggcctct gtag 984

<210> 58
<211> 327
<212> PRT
<213> Homo sapiens

<400> 58
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Pro Asp Gly Asp Gly Val Gly Asn Ser Tyr Ile Glu Asp Asn Asp Asp
20 25 30
Asp Ser Lys Met Ala Asp Leu Leu Ser Tyr Phe Gln Gln Gln Leu Thr
35 40 45
Phe Gln Glu Ser Val Leu Lys Leu Cys Gln Pro Glu Leu Glu Ser Ser
50 55 60
Gln Ile His Ile Ser Val Leu Pro Met Glu Val Leu Met Tyr Ile Phe
65 70 75 80
Arg Trp Val Val Ser Ser Asp Leu Asp Leu Arg Ser Leu Glu Gln Leu
85 90 95
Ser Leu Val Cys Arg Gly Phe Tyr Ile Cys Ala Arg Asp Pro Glu Ile
100 105 110
Trp Arg Leu Ala Cys Leu Lys Val Trp Gly Arg Ser Cys Ile Lys Leu
115 120 125
Val Pro Tyr Thr Ser Trp Arg Glu Met Phe Leu Glu Arg Pro Arg Val
130 135 140
Arg Phe Asp Gly Val Tyr Ile Ser Lys Thr Thr Tyr Ile Arg Gln Gly
145 150 155 160
Glu Gln Ser Leu Asp Gly Phe Tyr Arg Ala Trp His Gln Val Glu Tyr
165 170 175
Tyr Arg Tyr Ile Arg Phe Phe Pro Asp Gly His Val Met Met Leu Thr
180 185 190
Thr Pro Glu Glu Pro Gln Ser Ile Val Pro Arg Leu Arg Thr Arg Asn
195 200 205

Thr Arg Thr Asp Ala Ile Leu Leu Gly His Tyr Arg Leu Ser Gln Asp
 210 215 220
 Thr Asp Asn Gln Thr Lys Val Phe Ala Val Ile Thr Lys Lys Lys Glu
 225 230 235 240
 Glu Lys Pro Leu Asp Tyr Lys Tyr Arg Tyr Phe Arg Arg Val Pro Val
 245 250 255
 Gln Glu Ala Asp Gln Ser Phe His Val Gly Leu Gln Leu Cys Ser Ser
 260 265 270
 Gly His Gln Arg Phe Asn Lys Leu Ile Trp Ile His His Ser Cys His
 275 280 285
 Ile Thr Tyr Lys Ser Thr Gly Glu Thr Ala Val Ser Ala Phe Glu Ile
 290 295 300
 Asp Lys Met Tyr Thr Pro Leu Phe Phe Ala Arg Val Arg Ser Tyr Thr
 305 310 315 320
 Ala Phe Ser Glu Arg Pro Leu
 325

<210> 59
 <211> 765
 <212> DNA
 <213> Homo sapiens

<220>
 <221> modified_base
 <222> all n positions
 <223> n=a, c, g or t

<400> 59
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 catgcaaadc catatgttct ccgagctttt gaagacttta gaaagttctc tgagcaagat 120
 gattctgtag agcgagatat aattttacag tgtagagaag gtgaacttgt acttccggat 180
 ttggaaaaag atgatatgat tgttcgccga atcccagcac agaagaaaga agtgccgctg 240
 tctggggccc cagatagata ccaccagtc ccttttcccg aaccctggac tcttctcca 300
 gaaattcaag caaaatttct ctgtgtactt gaaaggacat gcccatccaa agaaaaaagt 360
 aatagctgta gaataattagt tccttcatat cggcagaaga aagatgacat gctgacacgt 420
 aagattcagt cctggaaaact gggaactacc gtgcctccca tcagtttcac ncttggcccc 480
 tgcagtgagg ctgacttgaa gagatgggag gccatccggg aggccagcag actcaggcac 540
 aagaaaaggc tgatgggtgga gagactcttt caaaagattt atggtgagaa tgggagtaag 600
 tccatgagtg atgtcagcgc agaagatgtt caaaacttgc gtcagctgcg ttacgaggag 660
 atgcagaaaa taaaatcaca attaaaagaa caagatcaga aatggcagga tgaccttgca 720
 aaatggaaaag atcgtcgaaa aagttacact tcagatctgc agaag 765

<210> 60
 <211> 255
 <212> PRT
 <213> Homo sapiens

<400> 60
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 1 5 10 15
 Thr Gly Ala Phe His Ala Asn Pro Tyr Val Leu Arg Ala Phe Glu Asp
 20 25 30
 Phe Arg Lys Phe Ser Glu Gln Asp Asp Ser Val Glu Arg Asp Ile Ile

35	40	45
Leu Gln Cys Arg Glu Gly Glu Leu Val Leu Pro Asp Leu Glu Lys Asp		
50	55	60
Asp Met Ile Val Arg Arg Ile Pro Ala Gln Lys Lys Glu Val Pro Leu		
65	70	75
Ser Gly Ala Pro Asp Arg Tyr His Pro Val Pro Phe Pro Glu Pro Trp		
	85	90
Thr Leu Pro Pro Glu Ile Gln Ala Lys Phe Leu Cys Val Leu Glu Arg		
	100	105
Thr Cys Pro Ser Lys Glu Lys Ser Asn Ser Cys Arg Ile Leu Val Pro		
	115	120
Ser Tyr Arg Gln Lys Lys Asp Asp Met Leu Thr Arg Lys Ile Gln Ser		
	130	135
Trp Lys Leu Gly Thr Thr Val Pro Pro Ile Ser Phe Thr Pro Gly Pro		
	145	150
Cys Ser Glu Ala Asp Leu Lys Arg Trp Glu Ala Ile Arg Glu Ala Ser		
	165	170
Arg Leu Arg His Lys Lys Arg Leu Met Val Glu Arg Leu Phe Gln Lys		
	180	185
Ile Tyr Gly Glu Asn Gly Ser Lys Ser Met Ser Asp Val Ser Ala Glu		
	195	200
Asp Val Gln Asn Leu Arg Gln Leu Arg Tyr Glu Glu Met Gln Lys Ile		
	210	215
Lys Ser Gln Leu Lys Glu Gln Asp Gln Lys Trp Gln Asp Asp Leu Ala		
	225	230
Lys Trp Lys Asp Arg Arg Lys Ser Tyr Thr Ser Asp Leu Gln Lys		
	245	250

<210> 61
 <211> 36
 <212> PRT
 <213> Homo sapiens

<400> 61
 Leu Pro Pro Glu Leu Ser Phe Thr Ile Leu Ser Tyr Leu Asn Ala Thr
 1 5 10 15
 Asp Leu Cys Leu Ala Ser Cys Val Trp Gln Asp Leu Ala Asn Asp Glu
 20 25 30
 Leu Leu Trp Gln
 35

<210> 62
 <211> 42
 <212> PRT
 <213> Homo sapiens

<400> 62

Leu Pro Gly Glu Val Leu Glu Tyr Ile Leu Cys Cys Gly Ser Leu Thr
1 5 10 15

Ala Ala Asp Ile Gly Arg Val Ser Ser Thr Cys Arg Arg Leu Arg Glu
20 25 30

Leu Cys Gln Ser Ser Gly Lys Val Trp Lys
35 40

<210> 63

<211> 44

<212> PRT

<213> Homo sapiens

<400> 63

Leu Ala Glu Val Val Glu Arg Val Leu Thr Phe Leu Pro Ala Lys Ala
1 5 10 15

Leu Leu Arg Val Ala Cys Val Cys Arg Leu Trp Arg Glu Cys Val Arg
20 25 30

Arg Val Leu Arg Thr His Arg Ser Val Thr Trp Ile
35 40

<210> 64

<211> 39

<212> PRT

<213> Homo sapiens

<400> 64

Leu Pro Asp Glu Val Val Leu Lys Ile Phe Ser Tyr Leu Leu Glu Gln
1 5 10 15

Asp Leu Cys Arg Ala Ala Cys Val Cys Lys Arg Phe Ser Glu Leu Ala
20 25 30

Asn Asp Pro Asn Leu Trp Lys
35

<210> 65

<211> 41

<212> PRT

<213> Homo sapiens

<400> 65

Leu Pro Leu Glu Leu Trp Arg Met Ile Leu Ala Tyr Leu His Leu Pro
1 5 10 15

Asp Leu Gly Arg Cys Ser Leu Val Cys Arg Ala Trp Tyr Glu Leu Ile
20 25 30

Leu Ser Leu Asp Ser Thr Arg Trp Arg
35 40

<210> 66

<211> 39

<212> PRT

<213> Homo sapiens

<400> 66
 Leu Pro Thr Asp Pro Leu Leu Leu Ile Leu Ser Phe Leu Asp Tyr Arg
 1 5 10 15
 Asp Leu Ile Asn Cys Cys Tyr Val Ser Arg Arg Leu Ser Gln Leu Ser
 20 25 30
 Ser His Asp Pro Leu Trp Arg
 35

<210> 67
 <211> 40
 <212> PRT
 <213> Homo sapiens

<400> 67
 Leu Pro Glu Pro Leu Leu Leu Arg Val Leu Ala Ala Leu Pro Ala Ala
 1 5 10 15
 Glu Leu Val Gln Ala Cys Arg Leu Val Cys Leu Arg Trp Lys Glu Leu
 20 25 30
 Val Asp Gly Ala Pro Leu Trp Leu
 35 40

<210> 68
 <211> 40
 <212> PRT
 <213> Homo sapiens

<400> 68
 Leu Phe Pro Pro Glu Leu Val Glu His Ile Ile Ser Phe Leu Pro Val
 1 5 10 15
 Arg Asp Leu Val Ala Leu Gly Gln Thr Cys Arg Tyr Phe His Glu Val
 20 25 30
 Cys Asp Gly Glu Gly Val Trp Arg
 35 40

<210> 69
 <211> 44
 <212> PRT
 <213> Homo sapiens

<400> 69
 Leu Pro Glu Val Leu Leu Leu His Met Cys Ser Tyr Leu Asp Met Arg
 1 5 10 15
 Ala Leu Gly Arg Leu Ala Gln Val Tyr Arg Trp Leu Trp His Phe Thr
 20 25 30
 Asn Cys Asp Leu Leu Arg Arg Gln Ile Ala Trp Ala
 35 40

<210> 70
 <211> 40
 <212> PRT
 <213> Homo sapiens

2044343-010702

<400> 70
 Leu Pro Leu His Met Leu Asn Asn Ile Leu Tyr Arg Phe Ser Asp Gly
 1 5 10 15
 Trp Asp Ile Ile Thr Leu Gly Gln Val Thr Pro Thr Leu Tyr Met Leu
 20 25 30
 Ser Glu Asp Arg Gln Leu Trp Lys
 35 40

<210> 71
 <211> 39
 <212> PRT
 <213> Homo sapiens

<400> 71
 Leu Pro Asp His Ser Met Val Gln Ile Phe Ser Phe Leu Pro Thr Asn
 1 5 10 15
 Gln Leu Cys Arg Cys Ala Arg Val Cys Arg Arg Trp Tyr Asn Leu Ala
 20 25 30
 Trp Asp Pro Arg Leu Trp Arg
 35

<210> 72
 <211> 44
 <212> PRT
 <213> Homo sapiens

<400> 72
 Ile Pro Leu Glu Ile Leu Val Gln Ile Phe Gly Leu Leu Val Ala Ala
 1 5 10 15
 Asp Gly Pro Met Pro Phe Leu Gly Arg Ala Ala Arg Val Cys Arg Arg
 20 25 30
 Trp Gln Glu Ala Ala Ser Gln Pro Ala Leu Trp His
 35 40

<210> 73
 <211> 39
 <212> PRT
 <213> Homo sapiens

<400> 73
 Leu Pro Pro Glu Val Met Leu Ser Ile Phe Ser Tyr Leu Asn Pro Gln
 1 5 10 15
 Glu Leu Cys Arg Cys Ser Gln Val Ser Met Lys Trp Ser Gln Leu Thr
 20 25 30
 Lys Thr Gly Ser Leu Trp Lys
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<210> 74
 <211> 39
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<400> 74
 Leu Pro Lys Glu Leu Leu Leu Arg Ile Phe Ser Phe Leu Asp Ile Val
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 Thr Leu Cys Arg Cys Ala Gln Ile Ser Lys Ala Trp Asn Ile Leu Ala
 20 25 30
 Leu Asp Gly Ser Asn Trp Gln
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<210> 75
 <211> 48
 <212> PRT
 <213> Homo sapiens

<400> 75
 Leu Pro Tyr Glu Leu Ile Gln Leu Ile Leu Asn His Leu Thr Leu Pro
 1 5 10 15
 Asp Leu Cys Arg Leu Ala Gln Thr Cys Lys Leu Leu Ser Gln His Cys
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 Cys Asp Pro Leu Gln Tyr Ile His Leu Asn Leu Gln Pro Tyr Trp Ala
 35 40 45

<210> 76
 <211> 44
 <212> PRT
 <213> Homo sapiens

<400> 76
 Leu Pro Met Glu Val Leu Met Tyr Ile Phe Arg Trp Val Val Ser Ser
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 Asp Leu Asp Leu Arg Ser Leu Glu Gln Leu Ser Leu Val Cys Arg Gly
 20 25 30
 Phe Tyr Ile Cys Ala Arg Asp Pro Glu Ile Trp Arg
 35 40

<210> 77
 <211> 49
 <212> PRT
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<400> 77
 Leu Pro Pro Glu Ile Gln Ala Lys Phe Leu Cys Val Leu Glu Arg Thr
 1 5 10 15
 Cys Pro Ser Lys Glu Lys Ser Asn Ser Cys Arg Ile Leu Val Pro Ser
 20 25 30
 Tyr Arg Gln Lys Lys Asp Asp Met Leu Thr Arg Lys Ile Gln Ser Trp
 35 40 45

Lys

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<210> 78
 <211> 39
 <212> PRT
 <213> Homo sapiens

<400> 78
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 Asp Arg Ala Cys Ala Ser Ser Val Cys Arg Arg Trp Asn Glu Val Phe
 20 25 30
 His Ile Ser Asp Leu Trp Arg
 35

<210> 79
 <211> 43
 <212> PRT
 <213> Homo sapiens

<400> 79
 Leu Trp Ala Trp Gly Glu Lys Gly Val Leu Ser Asn Ile Ser Ala Leu
 1 5 10 15
 Thr Asp Leu Gly Gly Leu Asp Pro Val Trp Leu Val Cys Gly Ser Trp
 20 25 30
 Arg Arg His Val Gly Ala Gly Leu Cys Trp Ala
 35 40

<210> 80
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<220>
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 Oligonucleotide

<400> 80
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<210> 81
 <211> 58
 <212> DNA
 <213> Artificial Sequence

<220>
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 Oligonucleotide

<400> 81
 gcggttactt acttagagct cgacgtctta cttacttagc tcacttctct tcacacca 58

<210> 82
 <211> 12
 <212> PRT
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<400> 82

Cys Asp Gly Glu Lys Asp Thr Tyr Ser Tyr Leu Ala
1 5 10

<210> 83
<211> 25
<212> PRT
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<400> 83
Cys Glu Ser Ser Phe Ser Leu Asn Met Asn Phe Ser Ser Lys Arg Thr
1 5 10 15

Lys Phe Lys Ile Thr Thr Ser Met Gln
20 25

<210> 84
<211> 12
<212> PRT
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<400> 84
Cys Glu Glu Ala Gln Val Arg Lys Glu Asn Gln Trp
1 5 10

<210> 85
<211> 19
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<400> 85
Asn Ala Gly Ser Val Glu Gln Thr Pro Lys Lys Pro Gly Leu Arg Arg
1 5 10 15

Arg Gln Thr

<210> 86
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<212> DNA
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<223> Description of Artificial Sequence:
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<400> 86
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17

<210> 87
<211> 17
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<213> Artificial Sequence

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Oligonucleotide

<400> 87
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17

<210> 88
<211> 17
<212> DNA
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<400> 88
catctggcac gattcca 17

<210> 89
<211> 17
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:
Oligonucleotide

<400> 89
ccgctcatcg tatgaca 17

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